

**What is claimed is:**

1                   1. A method for communicating TTY calls, comprising  
2   the steps of:  
3                   detecting a TTY call;  
4                   determining that a digital display on a first  
5   telecommunication terminal is to be used to display TTY  
6   information of the call from a second telecommunication  
7   terminal and that audio information will be transmitted to the  
8   second telecommunication terminal;  
9                   converting the TTY information to digital display  
10   information;  
11                   transmitting the digital display information to the first  
12   telecommunication terminal; and  
13                   muting an incoming call audio path from the second  
14   telecommunication terminal to the first telecommunication  
15   terminal.

1                   2. The method of claim 1 further comprises the step  
2   of generating the audio information transmitted to the second  
3   telecommunication terminal by a TTY device.

1                   3. The method of claim 2 wherein the step of  
2   generating the audio information comprises the step of  
3   receiving the audio information from at least one of an acoustic  
4   coupler of the TTY device via a handset of the first  
5   telecommunication terminal or an interface of the TTY device  
6   via an analog interface of the first telecommunication terminal.

1           4. The method of claim 3 further comprises the step  
2 of operating the TTY device and the first telecommunication  
3 terminal in a full duplex mode with respect to the second  
4 telecommunication terminal.

1           5. The method of claim 2 further comprises the steps  
2 of connecting the first telecommunication terminal to a  
3 telecommunication switching system via a first  
4 telecommunication link and the TTY device to the  
5 telecommunication switching system via a second  
6 telecommunication link; and  
7           transmitting the audio information to the second  
8 telecommunication terminal via the second telecommunication  
9 link.

1           6. The method of claim 5 further comprises the step  
2 of operating the TTY device and the first telecommunication  
3 terminal in a full duplex mode with respect to the second  
4 telecommunication terminal.

1           7. The method of claim 6 further comprises the step  
2 of establishing a bridged line appearance between the first and  
3 second telecommunication links.

1           8. The method of claim 5 further comprises the step  
2 of operating the TTY device and the first telecommunication  
3 terminal in a full duplex mode with respect to the second

4 telecommunication terminal.

1           9. The method of claim 1 further comprises the step  
2 of generating the audio information transmitted from the first  
3 telecommunication terminal to the second telecommunication  
4 terminal by a handset connected to the first telecommunication  
5 terminal.

1           10. The method of claim 9 further comprises the step  
2 of operating the handset and the first telecommunication  
3 terminal in a voice carry over mode.

1           11. The method of claim 1 wherein the step of  
2 determining comprises the step of responding to an act of a  
3 user on the first telecommunication terminal.

1           12. The method of claim 11 wherein the act occurs  
2 during the TTY call.

1           13. The method of claim 11 wherein the act occurs  
2 before the TTY call.

1           14. The method of claim 1 wherein the step of  
2 detecting comprises the step of determining from stored  
3 information that the second telecommunication terminal may be  
4 transmitting TTY information.

1           15. The method of claim 1 wherein the step of  
2 transmitting comprises the step of using a control path to the

3 first telecommunication terminal.

1           16. The method of claim 1 further comprises the step  
2 of enabling an outgoing audio call path from the first  
3 telecommunication terminal to the second telecommunication  
4 terminal on which voice information is communicated from a  
5 handset of the first telecommunication terminal.

1           17. The method of claim 1 wherein the second  
2 telecommunication terminal is a voice messaging system.

1           18. The method of claim 17 wherein the step of  
2 determining comprises the step of detecting from information  
3 stored on the voice message system that the second  
4 telecommunication terminal may be transmitting TTY  
5 information.

1           19. The method of claim 17 wherein the step of  
2 converting is performed by the voice message system.

1           20. An apparatus for communicating TTY calls,  
2 comprising:

3           a computer;

4           a controller;

5           a switching network;

6           a memory;

7           the computer by execution of a control routine

8           detecting a TTY call;

9           the computer by execution of the control routine  
10   determining that a first telecommunication terminal is to display  
11   TTY information received from a second telecommunication  
12   terminal on the digital display of the first telecommunication  
13   terminal;  
14           the controller converting the TTY information to digital  
15   display information; and  
16           the switching network communicating the digital  
17   display information to the first telecommunication terminal,  
18   enabling a first audio call path to the second telecommunication  
19   terminal, and disabling a second audio call path from the  
20   second telecommunication terminal to the first  
21   telecommunication terminal.

1           21. The apparatus of claim 20 further comprises a  
2   TTY device generating audio information for communication on  
3   the first audio call path to the second telecommunication  
4   terminal.

1           22. The apparatus of claim 21 wherein the TTY  
2   device and the first telecommunication terminal operate in a full  
3   duplex mode with respect to the second telecommunication  
4   terminal.

1           23. The apparatus of claim 22 further comprises at  
2   least one of an acoustic coupler of the TTY device coupled to  
3   the first telecommunication terminal via a handset of the first  
4   telecommunication terminal or an interface of the TTY device

5 coupled to the first telecommunication terminal via an analog  
6 interface of the first telecommunication terminal to generate the  
7 audio information.

1           24. The apparatus of claim 22 further comprises a  
2 first telecommunication link connecting the first  
3 telecommunication terminal to a telecommunication switching  
4 system and a second telecommunication link connecting the  
5 TTY device to the telecommunication switching whereby the  
6 audio information is transmitted to the second  
7 telecommunication terminal via the second telecommunication  
8 link.

1           25. The apparatus of claim 24 further comprises the  
2 telecommunication switching system establishing a bridged line  
3 appearance between the first and second telecommunication  
4 links.

1           26. The apparatus of claim 20 further comprises a  
2 handset connected to the first telecommunication terminal for  
3 generating voice information for communication on the first  
4 audio call path from the first telecommunication terminal to the  
5 second telecommunication terminal.

1           27. The apparatus of claim 26 wherein the handset  
2 and the first telecommunication terminal operate in a voice  
3 carry over mode.

1           28. The apparatus of claim 20 wherein the switching  
2 network communicating the digital display information to the  
3 first telecommunication terminal via a control path.

1           29. The apparatus of claim 20 wherein the computer  
2 during execution of the control routine to determine that a first  
3 telecommunication terminal is to display the TTY information  
4 accesses data in the memory.

1           30. The apparatus of claim 29 wherein the data  
2 stored in the memory was stored in response to an act of a user  
3 on the first telecommunication terminal.

1           31. The apparatus of claim 30 wherein the act occurs  
2 during the TTY call.

1           32. The apparatus of claim 30 wherein the act occurs  
2 before the TTY call.

1           33. The apparatus of claim 20 further comprises a  
2 voice message system and the voice message system is the  
3 second telecommunication terminal.

1           34. An apparatus for communicating TTY calls,  
2 comprising:  
3           means for converting TTY information into digital  
4 display information; and  
5           means for displaying the digital display information on  
6 the display of a telecommunication terminal in response to an

7 input of a user.

1 35. A processor-readable medium for communicating  
2 TTY calls, comprising processor-executable instructions  
3 configured for:

4 detecting a TTY call;

5 determining that a digital display on a first  
6 telecommunication terminal is to be used to display TTY  
7 information of the call from a second telecommunication  
8 terminal and that audio information will be transmitted to the  
9 second telecommunication terminal;

10 converting the TTY information to digital display  
11 information;

12 transmitting the digital display information to the first  
13 telecommunication terminal; and

14 muting an incoming call audio path from the second  
15 telecommunication terminal to the first telecommunication  
16 terminal.

1 36. The processor-readable medium of claim 35  
2 further comprises generating the audio information transmitted  
3 to the second telecommunication terminal by a TTY device.

1 37. The processor-readable medium of claim 36  
2 wherein generating the audio information comprises the step of  
3 receiving the audio information from at least one of an acoustic  
4 coupler of the TTY device via a handset of the first  
5 telecommunication terminal or an interface of the TTY device



6 via an analog interface of the first telecommunication terminal.

1 38. The processor-readable medium of claim 37  
2 further comprises operating the TTY device and the first  
3 telecommunication terminal in a full duplex mode with respect  
4 to the second telecommunication terminal.

1 39. The processor-readable medium of claim 36  
2 further comprises connecting the first telecommunication  
3 terminal to a telecommunication switching system via a first  
4 telecommunication link and the TTY device to the  
5 telecommunication switching system via a second  
6 telecommunication link; and  
7 transmitting the audio information to the second  
8 telecommunication terminal via the second telecommunication  
9 link.

1 40. The processor-readable medium of claim 39  
2 further comprises operating the TTY device and the first  
3 telecommunication terminal in a full duplex mode with respect  
4 to the second telecommunication terminal.

1 41. The processor-readable medium of claim 40  
2 further comprises establishing a bridged line appearance  
3 between the first and second telecommunication links.

1 42. The processor-readable medium of claim 35  
2 further comprises generating the audio information transmitted

3 from the first telecommunication terminal to the second  
4 telecommunication terminal by a handset connected to the first  
5 telecommunication terminal.

1 43. The processor-readable medium of claim 42  
2 further comprises operating the handset and the first  
3 telecommunication terminal in a voice carry over mode.

1 44. The processor-readable medium of claim 35  
2 wherein the determining comprises responding to an act of a  
3 user on the first telecommunication terminal.

1 45. The processor-readable medium of claim 44  
2 wherein the act occurs during the TTY call.

1 46. The processor-readable medium of claim 44  
2 wherein the act occurs before the TTY call.

1 47. The processor-readable medium of claim 35  
2 wherein the detecting comprises determining from stored  
3 information that the second telecommunication terminal may be  
4 transmitting TTY information.

1 48. The processor-readable medium of claim 35  
2 wherein the transmitting comprises using a control path to the  
3 first telecommunication terminal.

1 49. The processor-readable medium of claim 35  
2 further comprises the enabling an outgoing audio call path from

3 the first telecommunication terminal to the second  
4 telecommunication terminal on which voice information is  
5 communicated from a handset of the first telecommunication  
6 terminal.

1 50. The processor-readable medium of claim 35  
2 wherein the second telecommunication terminal is a voice  
3 messaging system.

1 51. The processor-readable medium of claim 50  
2 wherein the determining comprises detecting from information  
3 stored on the voice message system that the second  
4 telecommunication terminal may be transmitting TTY  
5 information.

1 52. The processor-readable medium of claim 50  
2 wherein the converting is performed by the voice message  
3 system.